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## SYPHILITIC IRITIS AND ITS COMPLICATIONS.

BY

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FOR some time back the attention of the writer has been called to several points in the course of syphilitic inflammation of the iris, which have not generally attracted sufficient attention on the part of authorities on this subject; and in particular the writer has not been able to find any mention made of the peculiar course taken by a specific iritis, when occurring in the colored race. These points may, perhaps, therefore form an apology for the following remarks.

Lancereaux says that of all manifestations of syphilis, the affections of the eyes are perhaps the most difficult of classification. Sometimes they accompany the syphilitic exanthemata, sometimes they appear at a later period. They form, so to say, an epoch of transition between the secondary alterations and the tertiary affections. In general they invade the eye from before backwards, and the later they appear in the course of the general disease, the more circumscribed and serious they become. None of the tissues of the eye are free from the invasion, though the iris and choroid are most generally affected.

One point in connection with the iritis which seems to be of some importance, is the co-existence of some variety of cutaneous disease, whether vesicular, papular or pustular; and although text books on the subject always mention this, yet I think that ophthalmologists do not give this fact the importance it deserves. It seems to me that it would be a matter of interest to note what variety of skin disease co-exists with the iritis as a rule, or whether there is no regularity in the matter. Vidal de Cassis (*Traité des maladies vénériennes*) says that syphilitic iritis is so closely connected with affections of the skin, that it may be regarded as one of the accidents of syphilitic eruptions. Mackenzie (*Diseases of the Eye*, London, 1866) says that the iritis is generally attended by a cutaneous eruption or sorethroat, and is sometimes, though rarely, co-existent with primary symptoms.

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Arlt (*Die Krankheiten des Auges*, Prag, 1860) states that the inflammation of the iris is accompanied by an eruption of the skin, and occurs only very rarely as the first secondary manifestation.

According to Niemeyer, iritis is a common complication of the syphilitic exanthemata, and Mooren asserts that it is a very great rarity for any disease of the iris, particularly the gummy variety, to appear without any other signs of the general affection. Ricord bears similar testimony, as well as a great number of other well-known authorities.

Wm. Acton (*A Practical Treatise on Venereal Diseases*, 1846) says that the first extended notice of a specific iritis was given by Schmidt of Vienna in 1801. Acton at first denied its existence, but afterwards changed his opinion. He claims that it is more frequent at the later periods of life and in the advanced stages of secondary symptoms. He observed it rarely as a sole symptom, but often with a peculiar train of secondary manifestations.

Wm. Lawrence (*Diseases of the Eye*, 1843) makes the assertion that syphilitic iritis is the most common form of iritis, is usually accompanied by other secondary symptoms, and is rarely seen as a sign of syphilis in infants.

It will, of course, be entirely superfluous to mention here the ordinary symptoms of an iritis, which is beyond the scope of this paper, but one symptom, that of gummy tumors, tubercles or condylomata, I shall call especial attention to. Virchow recognizes a peri-iritis or iritis serosa, and an iritis parenchymatosa. He also speaks of a gummy iritis or gummy tumor, called by Beer condyloma, which may open into the anterior chamber, causing hypopium, or may perforate the cornea and open externally. A syphilitic iritis is slow, uncertain and insidious in its progress. When occurring simultaneously with exanthemata, the periphery of the iris is first affected. It usually occurs alone, though it may be accompanied by a keratitis; but when it occurs later on in the general disease, the cornea is very often involved under the form of a punctate keratitis. The early form, or iritis serosa, usually ends in a perfect cure, but this is not always the case in the later form, which generally leaves behind it synechiæ, deformity of the pupil, and persistent trouble with the vision. The prognosis is generally serious, for the disease may extend to the choroid and retina.

Demarbaix (*Gazette des Hôpitaux*) distinguishes from the benign syphilitic iritis, occurring with roseola and condylomata, a specific malignant iritis which appears later, at the period when the secondary symptoms pass over into the tertiary. The origin of this much more unfavorable variety lies in the ciliary body, and the iris becomes



secondarily involved. The sclera becomes thinned and sometimes ruptures, and through the rent the ciliary body prolapses.

Syphilitic iritis is in most cases parenchymatous, and is, according to Mooren, complicated in about one quarter of the cases with gummy tumors. These gummata are sometimes the seat of purulent disintegration and are then nothing but abscesses. Their presence points in the majority of cases to secondary or tertiary syphilis. Most modern ophthalmologists deny the existence of any specific mark of distinction between syphilitic and non-syphilitic inflammation of the iris. These condylomata are not, however, always situated in the parenchyma of the iris, but may exist upon either the anterior or posterior surface of the membrane. They seem by preference to affect the pupillary margin, and generally, though not always, have a broad base. If treated they disappear by absorption, but if not, they generally grow rapidly and involve the ciliary body and choroid. They cause the displacement of the pupil, which was so generally regarded by the older writers as pathognomonic of a specific cause. Arlt says that a syphilitic iritis is distinguished by plastic exudation and a precipitate upon the posterior surface of the cornea. Vidal rejects the idea, that the nodules or tubercles are condylomata, and inclines to the idea that they are abscesses.

Weeker (*Traité des Maladies des Yeux*) claims that a specific iritis is always a localized process, and the condylomata occurring in the course of the inflammation he compares to the fleshy granulations of atonic ulcers.

As regards these growths, it was formerly supposed that they were composed of an amorphous exudation into the tissue of the iris, but they are now known to be identical with gummy tumors as described by Virchow. The purulent transformation of these vegetations is said to be very rare. They change the tissue of the iris into a mass which may be absorbed, but always at the expense of the iris structure, which becomes atrophic. From all that has been written upon the subject, and from the diversity of opinions advanced, it seems to be necessary to distinguish between those swellings caused by lymphoid exudation into the parenchyma and upon the surface of the iris, the result of true plastic inflammation, and the real gummy tumors, which, according to Virchow, are always the result of constitutional syphilis. The latter appear all over the body in the form of nodules, and hence sometimes bear the name of syphilitic tubercles, though they are not identical with true tubercle. In a histological sense they are to be regarded as "sui generis." Wagner calls them syphilomata. Virchow places them among the granulation tumors, though from their course, he distinguishes them from other analogous

tumors. Verneuil calls them syphilitic cytblasts. They are heteroplastic and belong to the more severe manifestations of syphilis, and are not always confined to the tertiary period. When cut into, a tenacious slippery fluid oozes out, or else the tumor is solid. Examined microscopically, they sometimes are seen to contain a delicate, fibrous, intercellular substance, with fusiform or round cells of various sizes, generally pale, and containing one or more nuclei. Sometimes, however, the tumor is of a firm consistency and resembles more the ordinary granulating connective tissue. The cellular elements may increase in number and even end in an actual suppuration and ulceration. Usually, however, their progress is retrogressive, and the result is a fatty metamorphosis, which may be of a dry, firm, cheesy character. In many cases absorption begins very soon after the development of the tumor. But this cheesy mass may remain for a long time and even become permanent. The third mode of termination is by ulceration. The fatty mass softens and disintegrates. The tumors are frequently surrounded by young, proliferating tissue, rich in cells.\* These tumors are sometimes met with in the choroid, but they are here very much smaller than in the iris. They generally form numerous, whitish nodules, sometimes isolated, sometimes in groups, which after absorption leave behind them atrophic or cicatricial spots. This form has been but little investigated, and in the retina it has never yet been observed.

Knapp (*Die Intraocularen Geschwülste*) distinguishes two forms of syphilitic tumor of the iris. The more rare form consists of transparent, wax-like, round, well-circumscribed nodules, of the size of a pin's-head. The other form is a circumscribed, reddish swelling upon the anterior surface of the iris which grows more and more prominent, and projects into the anterior chamber as a simple or cleft condylomatous excrescence. New ones rapidly develop, reach the cornea, and fill more or less completely the anterior chamber. Sometimes the gummy products form a grayish-red, dirty swelling, surrounding the pupil. This seems to be a less dense, diffuse infiltration of lymphoid cells into the tissue of the iris. In about half the cases syphilitic iritis never leads to the formation of gummata.

Alfred Graefe reports a case of iritis gummosa in the *Archiv für Ophthalmologie*, VIII., 1, which is of some interest, and in which the microscopical examination was made by Colberg. The case was one in which the constitutional symptoms had been very violent; and in spite of continued mercurial treatment, a nodule appeared in the iris. It grew very rapidly, and threatened to involve the whole eye,

\* Virchow, Die krankhaften Geschwülste.



and the tumor, with a portion of adjacent iris, was removed by an ordinary iridectomy. The immediate result was good, but only temporary; for in a few weeks the patient returned with a similar tumor in another part of the iris, and the accompanying symptoms were much worse. The same operation was again performed; and although there was no return of the trouble in the iris, yet the cornea became sclerosed, and only a small peripheral portion of it remained transparent. The tumors, on examination, were found to be composed of small cells, with nuclei, and occasionally one or more nucleoli. These cells were round or oval, with no enveloping wall; but in addition there were fusiform cells with a distinct cell-wall, so arranged as to point to a development of vessels. As the growths were recent, there was no trace of any fatty degeneration.

There is a very interesting case reported by Von Hippel in the *Archiv für Ophthalmologie*, XIII., 1, p. 65, in which the gummy deposit involved all the coats of the eye. There was a ptosis of the upper lid, the whole of the ocular conjunctiva was chemotic, and of a bluish-red color, entirely concealing the sclera from view. There was a general vascular parenchymatous keratitis; the iris was hyperæmic and discolored, the pupil was closed by a yellow mass, and the tension was diminished. The amaurosis was complete. In enucleating the ball, the sclera ruptured in two places, and pus oozed out. On examination a new growth was seen to have started from the ciliary body, on the nasal side, and had involved both iris and choroid, and had also made its way into the sclera. All the coats were very much thickened. The retina was detached from the choroid, except at the seat of the tumor, which had grown into and incorporated the retina with itself. There was no trace left of the crystalline lens. On microscopical examination the new growth was found to be composed of a soft, vascular tissue, rich in cells of the size of lymph corpuscles, with a round nucleus and finely granular protoplasm. There were a good many fat globules and fatty detritus, showing the tumor to have undergone a partial fatty degeneration.

Judging from clinical experience, syphilitic iritis runs a much more chronic course, and is more liable to exacerbations than the idiopathic form of the disease. Clinical observation also teaches us that a specific inflammation of the iris, if not carefully treated, will generally in time involve all the tissues of the globe. Even when cured the retina is apt to remain somewhat less sensitive, for a time, to impressions.

Authors seem to be divided in opinion as regards the frequency of syphilitic iritis as compared with the idiopathic form. Pagenstecher (*Klinische Beobachtungen*, Wiesbaden, 1862) states that among 71

recorded cases of iritis, 10 were syphilitic. In only one of these was found the so-called characteristic appearance—that is, the localization of the process by the formation of a nodule, although most of the secondary symptoms had been present in all. Stellwag (*Lehrbuch der Augenheilkunde*) says that a considerable percentage of all the cases of iritis have a syphilitic origin. He denies emphatically that syphilitic iritis is distinguished from the idiopathic form by any one symptom or chain of symptoms. His words are as follows:—“There is no local symptom, nor any combination of any local symptoms, which may stamp a syphilitic origin upon an iritis; and conversely, any iritis may be caused by syphilis, no matter what may be the accompanying symptoms. The syphilitic character of an iritis can only be determined from positive proof of general constitutional syphilis.”

The complications of syphilitic iritis form a very interesting subject for study, and were the main object of this paper. Most of the modern authors mention the fact that a specific iritis may extend by continuity of tissue, and the very intimate vascular anastomosis to the ciliary body and choroid, and may also often involve the retina, but it does not seem to the writer that sufficient stress has been laid upon the subject. In a very large proportion of cases of syphilitic iritis, I have observed the retina involved in the inflammation, and in the colored race, the choroid is almost certain to be affected.

Oglesby (*Edinburgh Medical Journal*, XV. p. 624), mentions the frequent co-existence of retinitis with syphilitic iritis, and its rare occurrence with simple iritis.

Benjamin Travers (*Diseases of the Eye*, London, 1821, p. 131), writes as follows: “We ought to consider that the local and vascular relations of choroid and iris, distinct as these coats are in texture and properties, are such as to make it exceedingly improbable that the one should not, in all cases, participate more or less in the inflammation of the other. Adhesions take place, and an iritis of moderate acuteness is often unaccompanied by any other appearance of inflammation.”

A distinct syphilitic retinitis is not usually admitted by ophthalmologists, though Jacobson recognises it as occurring with secondary syphilitic eruptions, without having been preceded by iritis or choroiditis. In the earlier stages the ophthalmoscopic signs are all negative, and the first symptom that is observed is a hyperæmic condition of the retina. The pathological changes are the same in the acquired and inherited form of the disease. The retinal vessels are numerous and enlarged, and the color of the disk is deepened. An effusion of serum follows closely the active congestion. There is a gray, hazy look to



the fundus, and the outline of the optic disk is indistinct. The serous effusion does not spread uniformly, but selects certain sections of the retina, most frequently near the yellow spot. When the entire retina is involved, the vitreous generally becomes turbid, and in these cases it is desirable to measure the field of vision. An effusion of lymph into the retina is a serious matter, for if it occurs rapidly, the whole retina may become the seat of purulent infiltration, and the eye is lost. If it occurs gradually, the prognosis is more favorable. The patches of effusion are then generally found in the course of the large vessels, and they resemble the spots seen in nephritic retinitis, though they are not so brilliant. There is more or less intense photophobia and occasionally photopsia. The evolution of the disease is slow and of long duration. The result is generally favorable, if careful treatment be pursued, though the disease may end in atrophy of the optic nerve.

Quaglino and Scarenzio (*Gazette Médicale de Paris*, Nov. 11, 1865) both think that there are no characteristic signs of syphilitic retinitis. In the majority of cases the entire field of vision is affected, and the contour of the optic papilla frequently presents masses of black pigment, due to a proliferation of the pigment cells of the choroid. The disease, according to these writers, frequently terminates in pigmentary degeneration and atrophy of the retina and papilla. In some cases the choroid becomes simultaneously involved and is infiltrated with lymphoid exudation, and choroidal pigment cells are entangled in the meshes of the atrophied retinal tissue.

One interesting point in these cases of syphilitic iritis is, the fact that in by far the greater number of cases the field of vision is more or less affected, and on examination of the fundus of these eyes, a retinitis is discovered. My attention was first called to the frequent occurrence of retinitis in these cases of iritis, by finding very often a limitation in the field of vision. The limitation is irregularly concentric, and when the pupil is not narrowed, nor rendered immovable by posterior synechiæ, the limitation gives a very fair idea of the degree to which the retina is involved in the process. The limitation of the field does not occur in every case of syphilitic iritis, but in those cases in which it was not present, no ophthalmoscopic evidence of retinitis could be discovered. From this we may conclude that limitation of the field of vision in syphilitic iritis proves the presence of an accompanying retinitis. The limitation is by no means regular, and is generally greater on the temporal than the nasal side. Sometimes the defect occupied the lower half of the field of vision; more rarely the upper half.

Another complication of syphilitic iritis is a choroiditis. The

syphilitic inflammation of the choroid may appear primarily and alone, without any iritis, though this is unusual. It is an exudative process, and always assumes the form of *choroiditis disseminata*. According to Zehender, this form of choroidal inflammation is most commonly of syphilitic origin, from two-thirds to three-fourths of the cases being of this nature. Von Graefe thought that form of choroiditis disseminata to be a sure sign of syphilis, which was characterized by numerous circumscribed white spots with reddish margins, appearing first in the posterior pole of the eye, and considered the prognosis favorable.

When the choroid is involved in the process, long, tortuous veins are seen upon the scleral conjunctiva, converging towards the cornea, where they anastomose and form arches surrounding the cornea. The vitreous humor is cloudy and full of floating bodies, and the papilla very indistinct. The choroidal vessels are at first enlarged, afterwards diminished in calibre, and scarcely recognizable. Small white patches of exudation appear in the posterior segment of the choroid, surrounded by a reddish brown ring, and in unfavorable cases these run together and coalesce, forming large white patches, which simulate atrophy in color. It sometimes attacks both eyes, but this tendency, I think, seems to grow less as the general syphilitic taint is older. The course is generally slow, sometimes lasting for months, with alternate exacerbations and recessions.

A cure is sometimes reached if treatment be carefully persevered in, but more frequently vision does not return, and this is probably due to a consecutive atrophy of the optic nerve.

My attention has been called, during the last few months, to the peculiarly unfavorable course which syphilitic iritis seems to run, when it occurs in negroes; and on mentioning the subject to several of my colleagues, I was informed that they had observed the same thing. This being the fact, it seems strange to me that I have been unable to find any mention of it anywhere, although I have looked very carefully. The iritis usually occurs simultaneously with some eruption of the skin, generally of the papular variety, and, so far as my experience goes, is at first always of the plastic type. Posterior synechiæ are a constant accompaniment, and the cornea generally becomes diffusely cloudy at an early date. But unfortunately the inflammatory process is not limited to these two membranes. Large tortuous veins appear just underneath the ocular conjunctiva and converge towards the cornea, the tension of the globe is increased, and the vitreous becomes cloudy; in other words we have the picture of a diffuse irido-choroiditis. The process in the iris now becomes a suppurative one, hypopyum makes its appearance, and the eye is lost



by the suppurative process extending to the choroid. Treatment seems to be of no avail, and even operative interference by an iridectomy, to relieve the pain which is generally very severe, seemed to do no good, and in some cases, I thought, rather hastened the destructive process. In one case the process did not go on to supuration, but seemed rather to be of a glaucomatous nature, and in spite of an iridectomy the eyeball retained its stony hardness, and the amaurosis became complete. In the cases which have been under my observation, the process was confined to one eye, but of course as long as the diseased eye remains in the orbit, the danger of sympathetic trouble in the fellow eye is not averted. In only one case out of six did the process fail to end in loss of vision and destruction of the globe, and even in this case vision was reduced to counting fingers held closely before the eye.

Owing to the vitreous becoming cloudy as soon as the inflammatory process extends to the choroid, it is impossible to diagnosticate with the ophthalmoscope the changes which take place in this membrane, but they are probably the same as occur in a choroiditis disseminata. These are exudation into the choroid along the course of the vessels, which by pressure cause atrophy, at first of the hexagonal pigment cells, and subsequently of the choroidal stroma itself. If the process is a suppurative one, the final result is a panophthalmitis, or destruction of all the tissues of the eye, with perhaps the exception of the sclera.







